and boil until the almost complete solution of the oxide is obtained; this should be done in a porcelain capsule, weighed beforehand. The liquid is decanted to separate the undissolved oxide, and the former is carefully evaporated upon the water-bath, constantly stirring, to the consistence of thick syrup, which is then weighed. Half this weight of distilled water is then added, the heat is kept up for a few moments, and the whole is thrown on the filter. The capsule and the filter should now be washed with a quantity of water equal to that used in the last place, and to the first fluid obtained, as much of the second is added, to get a mixture of the density of from 43.5 to 44 degrees.

By proceeding in this manner a very limpid fluid is obtained, with a slight acid reaction, but perfectly pure, having reached the maximum of saturation, and always identical. It may be kept without any of the salt being thrown down, provided the bottle be well stopped; the colour is dark-brown when the liquid is looked at in full, and of a greenish-gold colour when held to the light, or seen in a thin stratum. Five or six drops of this fluid, mixed with the white of an egg diluted with six drachms of water, are sufficient to coagulate the whole into a mass in the space of fifteen seconds. This mass firmly adheres to the bottom of the glass when the latter is turned up, and takes a pretty long time before it slowly drops, when the watery parts begin to run off, as the serum separates from coagulated blood.

At the meeting of the Surgical Society of Paris, held May 4, 1853, M. Debout presented the two carotids of a horse, into which perchloride of iron had been injected. In one of these vessels, for the distance of two inches, the artery being held by the fingers above and below, only six drops of the perchloride had been thrown. The clot formed had, however, been redissolved by the current of blood, and carried into the torrent of the circulation. The lining membrane of this vessel was healthy, except a small spot where an abscess was about to form. In the other carotid, fifteen drops of the perchloride had been injected for two inches and a half of its length, the upper and lower part of this length of artery being also compressed by the fingers. This vessel remained plugged all the time the animal lived. On a *post-mortem* examination, the whole length of the clot was found adherent to the parietes of the artery, the lining membrane being the seat of a suppurative inflammation. The vessel was quite obliterated, both above and below, in consequence of adhesive inflammation.

In a subsequent meeting, M. Debout gave a minute description both of the experiment and of the *post-mortem* appearances, and concluded that M. Pravaz, the discoverer of this property of the perchloride, was right in advising injections of very small doses. M. Debout very properly added that compression of the artery above the sac (as proposed and carried out by Dr. Bellingham, of Dublin) should be resorted to as an adjuvant of the injection, as there is a tendency in the blood remaining free in the artery to break down the clot formed by the perchloride. The author of the paper mentioned a case of aneurism at the bend of the elbow, following venesection, in the sac of which coagulation was obtained by a continuous galvanic current; compression of the vessel was neglected, and a week after the formation of the clot the latter was destroyed and washed away by the force of the arterial circulation.—*Lancet,* June 18, 1853.

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20. *Ferruginous Collodion.*—Having observed the utility of the salts of iron in erysipelas, M. Aran, to facilitate their application, combined them with collodion, forming a preparation which united the compressive and astringent effects. It consists of equal parts of collodion and Bestuchef's tincture (ethereal tincture of perchloride of iron). Spread on the skin, it forms a somewhat thinner pellicle than ordinary collodion, but it is much more supple and resisting, so that the limb can be moved in any direction without the cracking which takes place when collodion alone is used. Its adhesion is also more prolonged. —*Brit. and For. Med.-Chir. Rev.* July, 1853, from *Bull. de Thérapeutique,* t. xliv.

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21. *Trisnitrate of Bismuth adulterated with Arsenic.*—This medicine, so valuable in many forms of dyspepsia and diarrhœa, is often so carelessly prepared as to contain a quantity of arsenic more than sufficient to interfere with its therapeutic action, and to produce most unpleasant consequences. The *Annals*

of Pharmacy (January, p. 23) quotes the following remarks of M. CORNUT, who has followed up the researches of M. Lassaigne: "The bismuth commonly employed in the preparation of the trisnitrate of bismuth, contains a notable quantity of arsenic, and, to obtain a pure product, it is indispensable that the metal should be submitted to 'the process of roasting; and yet the manufacturers frequently neglect to perform this operation. For this reason, he thinks that the pharmaceutist should never dispense this substance without having first tested it, and especially when it is prescribed in large doses. He gives a process, at once simple and easy, for detecting arsenic. Moisten half a drachm of the trisnitrate of bismuth with a sufficient quantity of *pure* sulphuric acid, evaporate to dryness in a small porcelain capsule, wash the residue with a little distilled water; filter, and put into a Marsh's apparatus. A very simple one may be constructed, by passing a tube, drawn out to a point at one end, through the cork of a four or five ounce bottle. Care must be taken to use materials of absolute purity, and not to apply the light too soon, or an explosion may take place."—*Association Medical Journal*, June 17, 1853.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

22. *On Smallpox and Vaccination; Analytical Examination of all the Cases admitted, during Sixteen Years, at the Smallpox and Vaccination Hospital, London; with a View to illustrate the Pathology of Smallpox, and the Protective Influence of Vaccination in Degrees varying according as the Vaccination has been perfectly or imperfectly performed.* By J. F. MARSON, Resident-Surgeon to the Smallpox and Vaccination Hospital, London.—During the period comprised within this analysis, smallpox had been epidemic four times—in 1838, 1844, 1848, 1851; and rather more than half of the patients admitted into the hospital had been previously vaccinated. Much anxiety about the degree of security afforded by vaccination had begun to be felt, and the author thought the profession would be interested, and much useful information perhaps might be elicited, by classifying and arranging the patients admitted during the above-named period. The analysis referred principally to the following points:—

I. Natural smallpox.
II. Smallpox after smallpox.
  a. After natural smallpox.
  b. After inoculation.
III. Smallpox after vaccination.
  a. Number of cicatrices.
  b. Character of cicatrices.
  c. Vaccinated, but without cicatrices.
IV. Febrile eruptive diseases mistaken for smallpox.

A remarkable difference was observed between the vaccinated and unvaccinated patients, and also between the vaccinated cases themselves—some patients having the smallpox in a mild form, wholly devoid of danger, whilst others had it in great severity, scarcely if at all lessened by the previous vaccination. Under these circumstances the author thought that the causes of this remarkable difference might be sought for among the antecedents in respect to the vaccination of each individual admitted, with a view to explain the extreme mildness of some cases—the danger, unmitigated course, and even death of others. Smallpox in the unprotected remains to this day as virulent as it ever was. Vaccination, when performed in infancy, affords almost complete security against the fatality of smallpox up to the period of puberty; and the general experience of the Smallpox Hospital shows that smallpox did not usually occur after vaccination until several years had elapsed. The most trustworthy